

CLAIMS

What is claimed is:

1. In combination:

an electronic probe card for testing a die on a wafer;

said probe card having contacts adapted for electrical engagement with said die; and,

a removable cover connected to said probe card and positionable in a first position over said contacts of said probe card, said cover being movable to a second position exposing said contacts for said engagement with said die; and,

wherein said cover is movable from said first position to said second position while said probe card is located in a wafer testing machine.

2. The combination of claim 1, wherein movement between said first position and said second position is away from said probe card and generally along a Z-axis oriented normal to a plane defined by a bottom surface of said probe card.

3. The combination of claim 2 wherein said cover includes an engagement surface for engaging a holder, said holder comprising a mechanical member movable within said testing machine to engage and hold said cover and move it to said second position.

4. The combination of claim 3 wherein said mechanical member comprises a robotic element movable generally along said Z-axis and generally along a transverse X-axis.

5. The combination of claim 4 wherein said mechanical member moves along at least one track member generally along said X-axis.

6. The combination of claim 4 wherein said cover is attached to said probe card with at least one magnet.

7. The combination of claim 4 wherein said cover is attached to said probe card with at least one bayonet mount

8. The combination of claim 4 wherein said cover is attached to said probe card with at least one adhesive surface.

9. The combination of claim 1 wherein said cover is attached to said probe card with at least one magnet.

10. The combination of claim 1 wherein said cover is attached to said probe card with at least one bayonet mount

11. The combination of claim 1 wherein said cover is attached to said probe card with at least one adhesive surface.

12. The combination of claim 1 wherein said cover includes at least one flange member extending toward said probe card and surrounding said contacts, said cover with said

flange member and said probe card forming a sealed space therein, said space comprising a clean space having less than 100 parts per million of particulate matter exceeding one micron in diameter.

13. The combination of claim 4 wherein said cover includes at least one flange member extending toward said probe card and surrounding said contacts, said cover with said flange member and said probe card forming a sealed space therein, said space comprising a clean space having less than 100 parts per million of particulate matter exceeding one micron in diameter.

14. The combination of claim 1 wherein said cover includes an engagement surface for engaging a holder, said engagement surface being formed in a recess in said cover, said holder extending into said recess to hold said cover.

15. The combination of claim 14 wherein said cover includes at least one flange member extending toward said probe card and surrounding said contacts, said cover with said flange member and said probe card forming a sealed space therein, said space comprising a clean space having less than 100 parts per million of particulate matter exceeding one micron in diameter.

16. The combination of claim 1 wherein said cover includes an engagement surface for engaging a holder, said engagement surface including a key-lock recess for receiving said holder.

17. The combination of claim 1 wherein said cover includes an engagement surface for engaging a holder, said engagement surface including at least one magnet.

18. The combination of claim 1 wherein movement between said first position and said second position is away from said probe card and generally along an X-axis oriented parallel to a plane defined by a bottom surface of said probe card.

19. The combination of claim 18 wherein said cover moves from said first position to said second position along tracks on said probe card.

20. The combination of claim 1 wherein said cover moves from said first position to said second position along a hinge on said probe card.

21. The combination of claim 1 wherein said cover comprises an openable aperture including movable aperture sheaves.

22. A method for protecting an electronic probe card for testing die on a wafer, the probe card having contacts adapted for electrical engagement with said die, comprising the acts of:

providing an electronic probe card for testing a die on a wafer, said probe card having contacts adapted for electrical engagement with the die;

covering said contacts with a cover;

mounting said probe card with said cover in a wafer testing machine; and thereafter,
removing said cover from said contacts while said probe card is in said testing machine to
expose said contacts for testing the die in said testing machine.

23. The method of claim 22 wherein said removing includes mechanically holding
said cover and moving it generally in a Z-axis direction away from the probe card.

24. The method of claim 22 wherein said removing act is preceded by the act of
grabbing said cover with a robotic holder within said testing machine.

25. The method of claim 22 wherein the act of covering the contacts includes the act
of maintaining a sealed space within said cover around the contacts with a particulate level less
than 100 parts per million of particulate in excess of one micron in diameter.

26. The method of claim 23 wherein the act of moving the cover in said Z-axis
direction is preceded by the act of rotating the cover with respect to the probe card to release it
therefrom.

27. A covering for an electronic probe card for testing a die on a wafer, the probe card
having contacts adapted for electronic engagement with the die, comprising:

a removable cover connectable to said probe card and positionable in a first position over
the contacts of the probe card, said cover being movable to a second position exposing said
contacts for said engagement with the die; and,

means for engaging a holder wherein said cover is movable from said first position to said second position while said probe card is located in a wafer testing machine by having said means for engaging a holder held by a holder in the testing machine.

28. The covering of claim 27 wherein said means for engaging includes a key-lock recess for receiving said holder.

29. The covering of claim 27 wherein said means for engaging includes a magnet.

30. The covering of claim 27 wherein said means for engaging includes at least one recess in said cover adapted to receive a corresponding holding element in a wafer testing machine.

31. The covering of claim 27 and further comprising a bayonet mount on said cover for mounting said cover to the probe card.

32. The covering of claim 27 and further comprising a ferro-magnetic mount on said cover for mounting to a corresponding ferro-magnetic mount on the probe card.

33. The covering of claim 27 wherein said cover includes at least one flange member extendable toward said probe card for surrounding said contacts, said cover with said flange member and said probe card forming a space therein, said space comprising a clean space having less than 100 parts per million of particulate matter exceeding one micron in diameter.